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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

**Michael Wen-Chein Yang, et al.**

Serial No.: 09/898,152

Group Art Unit: 1752

Filing Date: July 3, 2001

Examiner: **Cynthia Hamilton**

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For: **LASER IMAGED PRINTING PLATES**

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**DECLARATION OF EDWARD T. MURPHY**

I, Edward T. Murphy, hereby declare that:

- 1) I have over 12 years of experience in managing the development of printing plates, including considerable background in the area of laser imaged printing plates containing a photopolymerizable layer and an ablatable layer.
- 2) I received a Bachelor of Arts degree in Mechanical Engineering from the Western New England College in 1971, and engaged in graduate studies in Mechanical Engineering at the University of Massachusetts from 1971 to 1975. I am registered as a Professional Engineer with the Commonwealth of Massachusetts.
- 3) From 1969 to 1973, I was employed by the Scott Graphics Company as a Process Development Engineer. During this time I performed research in coatings processes as they related to high resolution graphics imaging products.
- 4) From 1973 to 1994, I was employed by the W.R. Grace Company. During this time I held numerous positions including Process Engineer, Plant Manager, Manufacturing Manager

and Director of Engineering for the company's Polyfibron Division. From 1988 to 1994, I held the position of General Manager of Printing Plates for North America. In this position, I oversaw the business unit's research activities and, in fact, personnel involved in research and development of printing plates reported to me.

5) In 1994, W.R. Grace spun off the Polyfibron Division as Polyfibron Technologies, Inc., and I continued as General Manager of Printing Plates for North America at Polyfibron until 1999. MacDermid Graphic Arts acquired Polyfibron in December, 1999. I continued in my position as General Manager at MacDermid until I left the company in December, 2000.

6) Since December, 2000 I have become the President of GES Corporation. In this position, I am involved in the development, manufacturing, and marketing of physical therapy devices.

7) I have reviewed the patent application entitled "Laser Imaged Printing Plates" (copy attached as Exhibit A) which I understand to have been filed with the United States Patent and Trademark Office on June 25, 1993. I have also reviewed a set of patent claims (*i.e.*, claims 15 to 22, 25 to 28, 30 to 42, 44, and 45, copy attached as Exhibit B) that I understand to be pending in application Serial No. 09/898,152.

8) I understand that the Patent Office has asserted that claims 15 to 22, 25 to 28, 30 to 42, 44, and 45 contain subject matter that was not described in the June, 1993 patent application in such a way as to reasonably convey to those skilled in the art that the inventors had possession of the claimed subject matter.

9) I do not agree with the Patent Office that the subject matter defined by claims 15 to 22, 25 to 28, 30 to 42, 44, and 45 is not described in the June, 1993 patent application. It was apparent to me, upon review of the patent application, that it described the claimed subject matter, and that its inventors invented (and thus had possession of) this subject matter.

10) I consider myself to be a person having skill in the field to which the claimed photosensitive elements pertain, and also to be a person who had skill in this field in 1993. Each of claims 15 to 22, 25 to 28, 30 to 42, 44, and 45 is directed to photosensitive elements that contain a backing layer, a layer of photopolymerizable material, and an ablatable layer. The ablatable layer includes at least one infrared absorbing material and at least one binder. As indicated in the foregoing summary of my education and work experience, I have been involved in this filed since about 1988.

11) The patent application that is attached as Exhibit A describes photosensitive elements that contain a layer that is ablatable by laser radiation. The patent application does not require that a particular wavelength of laser radiation, or range of wavelengths, be used and, in fact, repeatedly refers to ablation at a "selected wavelength" or at an "appropriate wavelength" (see, for example, page 8, line 13; page 9, lines 23-24; page 10, line 34 to page 11, line 1; page 12, line 15 and lines 19-20; and page 13, lines 5-6). Consistent with this teaching, the patent application indicates at, for example, page 14, lines 18 to 20, that the wavelength of the laser used for ablation must be such that the laser treatment ablates the ablatable layer without damaging the photopolymer layer to an extent that it cannot subsequently be used as a printing surface.

12) In this regard, the patent application also describes experiments (in particular, Examples 3 to 7) in which ablation layers of photosensitive elements were ablated using IR laser radiation or UV laser radiation. Although the specification does not require that ablation occur at any particular wavelength, these experiments indicate to me that the use of IR lasers, as well as UV lasers, is preferred. For example, Example 3 describes ablation using a laser operating at a wavelength in the infrared region, *i.e.*, 10.6  $\mu\text{m}$ , and describes tests conducted using a laser at other infrared wavelengths, *i.e.*, 1.06  $\mu\text{m}$ . Although the YAG

laser in Example 3 was not effective in causing ablation under the particular operating conditions employed, those skilled in the art would have understood that the absence of ablation resulted from operating the laser at the relatively low power level that was being tested in Example 3, and that this could easily be remedied by operating the laser at a higher power level. Table II, for example, demonstrates that a CO<sub>2</sub> laser emitting in the infrared region was effective in causing ablation at some intensity levels, but was ineffective in causing ablation of the layers when operating at others. Those skilled in the art, therefore, would have understood that a YAG laser (also emitting in the infrared region) would be effective in causing ablation of the ablation layer if simply operated at, for example, a greater intensity level.

13) The 1993 patent application also describes photosensitive elements whose ablatable layers include a material that provides opacity to the wavelength of light that is used to cure photopolymerizable material in the element. The patent application, for example, states that "UV flood lamps normally provide the light for curing" (page 11, lines 26-27), and indicates that the presence of a UV absorber in the ablatable layer imparts UV opacity to the layer (page 9, lines 31 to 33). The patent application further states that the spectral range of the flood-exposure lamps used "in *most* applications" is 300-400 nm, that the UV absorber "*typically* should be active in this range," and that an alternative way of stating this is to say that the UV absorber must have a high extinction coefficient "in the *spectral output range of the developer lamps*" (page 10, lines 5 to 11, emphasis added). A "UV absorber," as described in the specification, is a material that absorbs the radiation used during the curing process, rendering the ablation layer opaque to such radiation. A material would be considered to be a "UV absorber" according to the 1993 patent application so long as it absorbs UV radiation, whether or not it also happens to absorb IR radiation. Thus, a material

used as a UV absorber in the ablatable layer that is described in the application could be active in the IR range, and could absorb both UV and IR radiation.

14) I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

10/21/02

Date

Edward T. Murphy  
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